correlation with ICU admission, in-hospital death or death within one year of transplant. Most stress test parameters correlate poorly with outcomes of HSCT. Routine stress testing is unlikely to be of significant prognostic value. Stress echocardiogram is of somewhat more value than stress MUGA given that rest LVEF and exercise time correlate with in-hospital death, but a standardized evaluation of exercise capacity in the clinic and rest echo may be adequate substitutes.

307

Population Pharmacokinetic Study of a Test Dose Busulfan Patients Undergoing Hematopoietic Stem Cell Transplantation

Iracema Esteves Nogueira [1], Juliana Fernandes [2,3], Eduardo K. Sugawara [4], Jose Salvador de Oliveira [5], Roseane Gouveia [6], Morgani Rodrigues [7], Daniele Porto Barros [8], Mariane Pereira Diniz [9], Fabio P. de Souza Santos [4], Andreza Feitosa Ribeiro [7], Jairo J.N. Sobrinho [4], Sandra Saemi Nakashima [4], Marcos de Lima [10], Nelson Hamerschlak [4], Fabio R. Kerbauy [4,5]. [1] UNIFESP (Universidade Federal de São Paulo), Brazil; [2] Onco-Hematology Unit, Instituto da Criança - HC - FMUSP, Sao Paulo, Brazil; [3] Hospital Israelita Albert Einstein, Brazil; [4] Hematology and Bone Marrow Transplantation Dept, Hospital Israelita Albert Einstein, Brazil; [5] Hematology and Bone Marrow Transplantation Dept, UNIFESP (Universidade Federal de Sao Paulo), Brazil; [6] Pediatric Bone Marrow Transplantation Center, Instituto de Oncologia Pediatrica, São Paulo, Brazil; [7] Hematology and Bone Marrow Transplantation Dept, Hospital Israelita Albert Einstein, Sao Paulo, Brazil; [8] Instituto de Oncologia Pediátrica, São Paulo, Brazil; [9] Clinical Research Center, Instituto de Oncologia Pediátrica, São Paulo, Brazil; [10] Department of Medicine - Bone Marrow Transplant Program, Case Western Reserve University, Cleveland

Introduction: Busulfan (bu) is one of the most used chemotherapy in conditioning regimens for patients submitted to hematopoietic cell transplantation (HCT). As Bu pharmacokinetic (PK) is widely variable, dose adjustment according to patient PK has been shown to minimize toxicities improving clinical outcome. Usually, PK is calculated from blood samples collected after the first Bu dose, guiding adjustment of following doses. Although this method has shown to be reliable, it can be difficult to perform PK in an optimal time frame. Therefore, using a test dose before HCT can optimize this method, potentially given more accurate dose adjustment. Bu test dose has been used with Bu iv formulation, but little is known with oral Bu. In countries like Brazil where oral Bu is still been used because of cost issues an optimal drug administration should be developed.
Objectives: To validate the use of oral Bu test dose by comparing PK from dose test and first conditioning regimen dose.
Methods: 19 patientes were enrolled. Median age was 28 year (range, 4-56). 4 (21%) patients received autologous HCT while 19 (79%) allogeneic grafts from MRD or MUD donors. As conditioning regimens, 1 patient recieved Bu(16)/Flu(160), 9 Bu(16)/Cy(120), 3 Bu(16)Mel(140), 2 Bu(12)/Cy(120)/Mel(140) and 4 Bu(12)/Cy(120)/Etoposide(1200). After oral test dose (1mg/kg) 72 hours before conditioning regimen, blood samples were collected at 8 time points. Samples were also collected after the first Bu dose (1mg/kg) during conditioning regimen. Bu concentrations were measured by HPLC. PK parameters were estimated by using nonlinear mixed effects model computer program. No Bu dose adjustment was performed based on test dose.
Results: PK parameters were comparable between test dose and first conditioning dose: median Bu Clearance (microMol/min) was 10115,9 (range: 333,43-18270,4) and 11866,1 (range: 4520,3-15589,2) respectively ($P = 0,738$); median concentration steady state (mcg/L) was 0,80 (range: 0,55-1,59) and 0,76 (range: 0,59-1,23) respectively ($P = 0,672$); half life (hours) was 2,85 (range: 1,65-5,61) and 2,65 (range: 1,71-6,09) respectively ($P = 0,172$). Area under the curve (AUC) (mcgMol.min) was also comparable showing a median of 1174 (range: 799-2328) and 1110 (range: 857-1795) respectively ($P = 0,679$). Toxicities was comparable to literature data: 14 (88%) and 5 (12%) patients developed grades 1 to 3 and grade 4 mucositis respectively; 2 (10%) patients developed sinuisodal obstruction syndrome (SOS) both received Bu/Cy/Etoposide protocol. All patients achieved full donor chimerism. Incidence of grade II-IV acute and extensive chronic GVHD was 55% and 31% respectively. With a median follow-up of 82 days (range: 18-321) 17 patients were alive.
Conclusions: A population PK model for oral Bu could be developed, showing efficacy and safety of oral Bu test dose.

308

Catheter-Related Complications in Acute Myeloid Leukemia Patients After Hematopoietic Stem Cell Transplant

Mohammad O. Khalil [1], Namali Pierson [2], George Selby [1], Mohamad Cherry [1], Jennifer Holter [1]. [1] Department of Internal Medicine, Section of Hematology and Oncology, University of Oklahoma Health Sciences Center, Oklahoma City, OK; [2] Department of Internal Medicine, University of Oklahoma Health Sciences Center, Oklahoma City, OK

Background: Intravenous catheters are widely used in hematopoietic stem cell transplant (HSCT) patients. Complications associated with these catheters are frequently encountered and contribute to morbidity, mortality, and increased cost of treatment. Studies exploring such complications in this unique patient population are lacking. We retrospectively studied infectious and thrombotic catheter-related complications in acute myeloid leukemia (AML) patients after undergoing HSCT at the largest tertiary referral center in Oklahoma.
Methods: AML patients above the age of 18 who had HSCT at The University of Oklahoma Health Sciences Center between January, 2000 and June, 2012 were identified and medical records were reviewed. Patients were stratified according to age, first HSCT type and type of catheter(s) present at or after the first HSCT (Hickman, peripherally inserted central catheter (PICC) or infusion port (IP)). First blood stream infection (BSI) and deep venous thrombosis (DVT) events after the first HSCT were reported (subsequent events were not included). Statistical analysis was performed using SAS 9.2 software (SAS Institute Inc.). Fisher's exact test was used to compare patients in the different groups.
Results: 62 patients were included. Median age at diagnosis was 44 years. 42 (68%) were males and 20 (32%) were females. 53 (87%) were White, 4 (7%) Native American and 3 (5%) African American. 26 (43%) had sibling (SIB), 22 (36%) unrelated donor (URD) and 13 (21%) double cord blood (DCB) transplant. 56 (93%) had Hickman, 30 (50%) PICC and 7 (12%) IP. 28 patients had one catheter type only (24 Hickman and 4 PICC). BSI occurred in 37% of all cases. BSI rates according to the presence or absence of a particular catheter type were 38% vs. 33% for Hickman, 37% vs. 38% for PICC and 43% vs. 36% for IP. In patients with only one catheter type, BSI rates were 38% for Hickman vs. 50% for PICC ($P = .9$). BSI occurred in 40%